

REMARKS

Applicants have cancelled claims 35-46, 69, 71, 74-83, 86 and 94-96 without prejudice. Applicants have amended claim 55 based on the disclosure, for example, at page 9, line 18 - page 10, line 1, of the specification. Applicants have amended claims 67, 68, 70, 84, 85 and 87-93 based on the disclosure, for example, at page 18, line 2 - page 19, line 10, and in FIG. 10 of the application. Claims 46-54 have been amended to depend from claim 67.

The anticipation rejection of claims 35-39 on Japanese Patent Publication No. H02-162,744 (Simizu) is moot in view of the cancellation of these claims.

Claims 35-39, 43-59, 63-73 and 84-96 have been rejected under 35 USC 103(a) as unpatentable over Simizu in view of U.S. Patent No. 4,803,527 (Hatta). Applicants respectfully traverse this rejection.

The rejection of claims 35-39 and 43-46 is moot in view of the cancellation of these claims.

Claim 55 as amended states that the first high concentration impurity region is closer to the bonding pad than the second high concentration impurity region but not in contact with the bonding pad so as to have a Schottky junction between the first high concentration impurity region and the bonding pad and is configured to be electrically connected to the bonding pad through the Schottky junction so as to permit the current flow upon the application of the electrostatic energy. In other words, the claimed protecting element for the transistor includes the Schottky junction in addition to the insulating region between the first and second high concentration impurity regions.

The Examiner does not point to any portion of Simizu or Hatta for the disclosure of the claimed configuration of the first high concentration impurity region. Rather, the Examiner contends that “[c]laims 45-58 are obvious as the particular breakdown voltages and exact dimensions of device regions are result effective variables and there are no unexpected results over the teachings and the suggestions of the applied art to one of ordinary skill.” See page 4 of the Action.

First, contrary to the Examiner's allegation, the limitation that the first high concentration impurity region is not in contact with the bonding pad so as to provide a Schottky junction between the first high concentration impurity region and the bonding pad relates neither to the breakdown voltages, as recited in claims 47 and 48, nor to the dimension of the insulating region, as recited in claim 49. Rather, this limitation goes to one of the fundamental design improvements of the protecting element, i.e., providing the Schottky junction in addition to the insulating region between the first and second high concentration impurity regions.

Second, neither Simizu nor Hatta discloses this limitation. Simizu's diode electrode 6, which the Examiner equates to the claimed bonding pad, is in contact with Simizu's n^+ -type diffusion region 3, which the Examiner equates to the claimed first high concentration impurity region. See pages 7 and 8 of the translation of Simizu submitted with the Information Disclosure Statement at the time of filing this application. Hatta discloses an "electrostatic destruction protection structure" that includes two n^+ -type impurity regions 7A and 7B. See column 3, lines 55-68, and FIG. 1 of Hatta. However, both of Hatta's n^+ -type impurity regions 7A and 7B are in contact with respective bonding pads 6(BP) and 6(GND). See FIG. 2 of Hatta. On the contrary, claim 55 requires that the first high concentration impurity region is not in contact with the bonding pad so as to have a Schottky junction between the first high concentration impurity region and the bonding pad for electrostatic discharge protection.

Neither Simizu nor Hatta discloses the claimed configuration of the first high concentration impurity region.

Claim 67 recites a first bonding pad connected to the source electrode or the drain electrode, a second bonding pad connected to the gate electrode and a resistor connecting the second bonding pad and the gate electrode and comprising a resistor high concentration impurity region. Claim 67 also states that the first high concentration impurity region of the protecting element connected between the first and second bonding pads is at least part of the resistor high concentration impurity region. The Examiner relies on Hatta's resistance element R for the teachings of the claimed resistor. See page 4 of the Action. Applicants respectfully disagree.

Hatta's resistance element R is not part of Hatta's electrostatic destruction protection structure. Specifically, Hatta's resistance element R shares no part of n^+ -type impurity regions 7A and 7B of Hatta's electrostatic destruction protection structure. See FIG. 1 of Hatta. On the contrary, claim 1 requires that the first high concentration impurity region of the protecting element be at least part of the resistor high concentration impurity region of the resistor.

It is true that Hatta's n^+ -type impurity regions 7A and 7B have some electric resistance. However, claim 67 requires that the resistor connect the second bonding pad and the gate electrode. Accordingly, the claimed protecting element uses as the first high concentration impurity region an wiring that is required in the circuitry of a transistor, i.e., connection between a gate electrode and a gate pad. On the contrary neither n^+ -type impurity region 7A nor region 7B connects to gate electrode 3 of Hatta's transistors Q1 and Q2. See FIG. 1 of Hatta. Rather, Hatta's n^+ -type impurity regions 7A and 7B are formed in Hatta's substrate 1 solely to form Hatta's electrostatic destruction protection structure. See column 5, lines 29-37, of Hatta.

Neither Simizu nor Hatta teaches or suggests the limitation that the first high concentration impurity region of the protecting element be at least part of the resistor high concentration impurity region of the resistor connecting the gate electrode and the second bonding pad.

Claim 84 recites a resistor similar to that in claim 67, which neither Simizu nor Hatta discloses, as explained above.

The rejection of claims 47-59, 63-73 and 84-96 under 35 USC 103(a) over Simizu and Hatta should be withdrawn because they do not teach or suggest the claimed invention as a whole.

The remaining obviousness rejection relies on Simizu and Hatta and thus should be withdrawn as well because Simizu and Hatta do not provide the teachings for which they are cited.

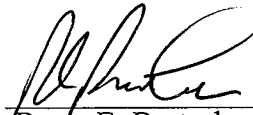
In light of the above, a Notice of Allowance is solicited.

In the event that the transmittal letter is separated from this document and the Patent and Trademark Office determines that an extension and/or other relief is required, applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952**, referencing Docket No. **492322017300**.

Respectfully submitted,

Dated: December 12, 2008

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